Sidewalk Strategic Plan

Public Works Commission

June 10, 2009

Current Sidewalk Program

- Annual budget of $480,000
- Funding is allocated by City Ward
- Improvement list is compiled as complaints are received
- Improvements are scheduled in response to complaints
- Improvements are prioritized by need after a field inspection by a Public Works Engineer
- Improvements between 2003 – 2007: between 1.75 – 3 miles annually

Burlington Sidewalk System

City streets	88.6 miles
City sidewalks	150.2 miles
Missing sidewalks	27 miles
Sidewalk needed to meet Transportation Plan policy to have sidewalk on one side of every street and both sides of Complete Streets	4.5 miles

Goals to Improve the Sidewalk Program

- Identify an acceptable condition for our sidewalks
- Lower the life cycle of our system by increasing the number of miles improved each year
- Use the most efficient methods for installation
- Coordinate projects with other right-of-way improvements to increase efficiency
- Utilize alternative funding sources to construct new sidewalk
- Move toward a more pro-active planning process
- Increase the commitment to curb and greenbelt restoration
- Meet American's with Disabilities Act (DAA) requirements, walkability goals, and current standards

Key features of the strategic plan

- Deficiency index
- Pedestrian potential index
- Long repairs = 80% of funding
- Short run repairs = 10% of funding
- Greenbelt/curb restoration = 10% of funding
- Leverage long run repair funding to construct new sidewalks using alternative funding

Details of the Sidewalk Strategic Plan

- The SSP has allowed the City to develop a plan that:
  - is comprehensive, comparing every section of sidewalk in the City;
  - will measure a decline in the total deficiencies for the sidewalk system;
  - will measure a decline in the sidewalk condition index;
  - will develop a deterioration rate of sidewalks;
  - will repair the worst sidewalks in the most frequently walked areas first, regardless of Ward.

SSP Development

- The SSP consists of:
  - deficiency index (DI)
  - pedestrian potential index (PPI)

  DI + PPI = Sidewalk Condition Index (SCI), which is used to rank sidewalk repairs.

Deficiency Index

- complete inventory of our sidewalk network
- inventory completed by volunteers and City staff
- deficiencies were all given equal priority and include (*one per slab/5' section)*:
  - Vertical & horizontal displacement
  - Drainage problem
  - Deterioration or material inconsistency
  - Spalling or cracking
  - Obstruction
  - Detectable warning
  - Ramp slope < 8.33%
  - Ramp > 4'x4'
  - Ramp flares' slope < 10%
  - Landing slope < 2%
  - Landing > 4'x4'
  - Ramp lip < ¼"

Pedestrian Potential Index

- assigns points to variables that affect pedestrian travel along a section of sidewalk,
- values were discussed at the NPAs that responded to our request to present this information,
- sidewalk improvements are ranked based on these values.

Variable	Code	Description	Assigned Value
Type of Road	ART	Arterial	5
	COL	Collector	3
	LCL	Local	1
Major Pedestrian Generators	ASL	W/in 0.25 mi of retirement community, assisted living, or senior center	5
	CC	W/in 0.25 mi of library, community center, places of worship, etc	3
	WK	W/in 1 mile of employment center for > 200 employees	3
	SOC	W/in 0.25 mi of community medical & social services	1
School Zones	ES	W/in 0.25 mi of elementary school	5
	MHS	W/in 0.5 mi of middle or high school	3
	UNV	W/in 1 mi of college or university	3
Transit Routes	TRN	Roads that are transit routes	5
Commercial Areas	DD	W/in Designated Downtown	5
	NAC	W/in 0.25 mi of Neighborhood Activity Center	4
Paths, Trails, & Parks	PK	W/in 0.25 mi	3
No Sidewalks on Either Side	SIDE	City policy for at least one sidewalk on every street	5

Using the SSP

- sidewalk improvements based on an equal weight of the deficiency index and the PPI;
- sidewalks in the worst condition (i.e. having the highest number of deficiencies per section of sidewalk, generally equal to one block) in the areas with the greatest potential for use by pedestrians (i.e. the highest PPI) rise to the top of the list to be repaired.

Creating a Workplan

Goal 3: use the most efficient methods of installation

- more efficient and cost-effective to replace longer sections
- some small sections of sidewalk are in such poor condition that they cannot be ignored
- Workplan includes “long run” list and a “short run” list (<4 adjacent slabs)

Funding

Goal 2: increase the number miles improved annually

- devote 80% to the long run repairs
- devote 10% to greenbelt and curb repair
- devote 10% of the sidewalk program budget to short run repairs

Comparison to Current Program

- Repair requests are received and reviewed;
- Workplan will only be changed if the condition has changed since original inventory;
- Only compare number of miles improved, affected by cost of sidewalk repairs and installation

FY2010	Start	End	Total Deficiencies	PPI VALUE (max 50)	SCI RANK	Ward	Segment Length
South Union St	Beech St	Shelburne St	130	32	**82**	6	884
College St	So Winooski Ave	So Union St	75	32	**82**	3	480
South Union St	Kingsland Terr	Maple St	63	32	**82**	6	803
South Union St	Adams St	Maple St	45	32	**82**	6	599
Main St	So Winooski Ave	Church St	39	32	**82**	3	324
College St	South Union St	Hungerford Terr	23	32	**82**	2	492
Maple St	Church St	So Winooski Ave	113	30	**80**	6	382
Maple St	So Willard St	So Union St	94	30	**80**	6	866
		AVERAGES	72.75				4830 (0.91 mi)
		CUMULATIVE					4830 (0.91 mi)

System average of deficiencies in FY2009 = 55.47 & after FY2010 repairs = 55.00
System average SCI in FY2009 = 51.45 & after FY2010 repairs = 51.12

FY2011	Start	End	Total Deficiencies	PPI VALUE (max 50)	SCI RANK	Ward	Segment Length
Maple St	So Union St	So Winooski Ave	46	30	**80**	6	458
Maple St	So Union St	So Winooski Ave	40	30	**80**	6	449
Maple St	So Union St	So Willard Ave	37	30	**80**	6	863
Pearl St	George St	No Champlain St	107	29	**79**	3	571
College St	So Union St	So Willard St	88	29	**79**	2	862
Pearl St	No Champlain St	Battery St	71	29	**79**	3	366
Park St	Pearl St	Monroe St	69	29	**79**	3	339
Battery St	Pearl St	Monroe St	69	29	**79**	3	334
Pearl St	Elmwood Ave	George St	66	29	**79**	3	336
		AVERAGES	65.89				4578 (0.86 mi)
		CUMULATIVE					9480 (1.78 mi)

System average of deficiencies after FY2010 = 55.00 & after FY2011 repairs = 54.50
System average SCI after FY2010 = 51.12 & after FY2011 repairs = 50.75

FY2012	Start	End	Total Deficiencies	PPI VALUE (max 50)	SCI RANK	Ward	Segment Length
Park St	Monroe St	Sherman St	49	29	**79**	3	233
Battery St	Monroe St	Sherman St	49	29	**79**	3	222
Pearl St	No Prospect St	No Williams St	41	29	**79**	1	730
Shelburne St	Birchcliff Pkwy	Gove Ct	302	28	**78**	5	1467
Elmwood Ave	Peru St	Pearl St	137	27	**77**	3	767
No Winooski Ave	Grant St	Pearl St	97	27	**77**	3	605
North St	Murray St	Elmwood Ave	87	27	**77**	3	516
		AVERAGES	108.86				4540 (0.86 mi)
		CUMULATIVE					13,498 (2.64 mi)

System average of deficiencies after FY2011 = 54.50 & after FY2012 repairs = 53.88
System average SCI after FY2011 = 50.75 & after FY2012 repairs = 50.46

FY2013	Start	End	Total Deficiencies	PPI VALUE (max 50)	SCI RANK	Ward	Segment Length
St Paul St	So Union St	Howard St	82	27	**77**	3	890
Pine St	Kilburn St	Maple St	71	27	**77**	5	889
Elmwood Ave	Allen St	Peru St	69	27	**77**	3	346
St Paul St	Kilburn St	Marble Ave	69	27	**77**	5	688
Pearl St	Green St	No Union St	64	27	**77**	2	438
Maple St	Harrington Terr	So Willard St	57	27	**77**	6	381
St Paul St	Adams St	Maple St	56	27	**77**	3	604
St Paul St	Spruce St	Adams St	52	27	**77**	6	627
		AVERAGES	65				4863 (0.92 mi)
		CUMULATIVE					18,811 (3.56 mi)

System average of deficiencies after FY2012 = 53.88 & after FY2013 repairs = 53.45
System average SCI after FY2012 = 50.46 & after FY2013 repairs = 50.14

FY2014	Start	End	Total Deficiencies	PPI VALUE (max 50)	SCI RANK	Ward	Segment Length
St Paul St	Catherine St	Marian St	51	27	**77**	5	650
Elmwood Ave	North St	Allen St	48	27	**77**	3	334
North St	North Champlain St	Murray St	48	27	**77**	3	395
St Paul St	Maple St	King St	48	27	**77**	3	350
Pearl St	North Winooski Ave	Clarke St	47	27	**77**	3	219
North St	North Champlain St	Park St	44	27	**77**	3	353
Pine St	Maple St	King St	44	27	**77**	6	349
So Union St	College St	Main St	44	27	**77**	3	391
St Paul St	Howard St	Catherine St	42	27	**77**	5	364
So Winooski Ave	Maple St	Adams St	40	27	**77**	6	526
St Paul St	Main St	King St	39	27	**77**	6	371
Main St	Pine St	St Paul St	37	27	**77**	3	350
		AVERAGES					4,562 (0.88 mi)
		CUMULATIVE					23,463 (4.44 mi)

System average of deficiencies after FY2013 = 53.45 & after FY2014 repairs = 53.02
System average SCI after FY2013 = 50.14 & after FY2014 repairs = 49.64